



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. Of: SASAKI

Serial No.: 09/855,148

Filed: May 14, 2001

For: FABRICATION METHOD OF LIQUID CRYSTAL DISPLAY PANEL

Group: 2871

Confirmation No. 1115

Examiner: DUONG, Thoi V.

DOCKET: NEC 142491

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Commissioner for Patents
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PRE-APPEAL BRIEF

Dear Sir:

This Pre-Appeal Brief is being filed in response to the Final Action mailed February 6, 2006. A Notice of Appeal accompanies this Brief.

Respectfully submitted,

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PRE-APPEAL BRIEF REQUEST FOR REVIEW

This Pre-Appeal Brief Request for Review is being filed in response to the final Official Action mailed February 6, 2006. Accompanying this Request is a Notice of Appeal.

REMARKS

Claims 2-4 and 6-9 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art ("AAPA") in view of US Patent No. 5,231,527 to Takanashi et al. (hereinafter, "Takanashi"). This rejection is clearly improper and based on an erroneous use of the teaching of Takanashi in combination of the AAPA.

As will be detailed herein, the Examiner has made two clear mistakes in this case. First, the Examiner has inappropriately altered the initial average size of the spacers in Takanashi based on either misunderstanding or misapplying the standard deviation of spacer size disclosed by Takanashi. Second, the Examiner has used the inappropriately altered initial average size to invent the motivation to combine references, specifically that Takanashi taught making the initial average size of the spacers greater than the appropriate cell gap to "realize uniform display quality by reducing cell gap deviation."

The relevant portion of the AAPA is a description of the prior art method of manufacturing a liquid crystal display panel by the liquid crystal falling drop method in paragraph on page 3 lines 9-25 of the original-filed application, as follows:

On the other hand, in the liquid crystal falling-drop method, the LCD panel is assembled through the steps mentioned below. The seal in the form of a closed line is formed around the display area on either one of the transparent substrates by a drawing printing using a dispenser or a screen printing, etc. And, the display area spacers are arranged on the transparent substrate by forming them or dispersing them. Thereafter, a suitable amount of liquid crystal is dropped onto the display area of the transparent substrate. Thereafter, one of the transparent substrates is stuck on the other and adhered each other in a vacuum chamber. Then, the mutually adhered transparent substrates are left under atmospheric pressure, so that the transparent substrates are deformed by a

pressure corresponding to a difference between atmospheric pressure and a negative pressure within the LCD panel to reduce the gap between the transparent substrates. The seal is hardened at a time when a desired cell gap is obtained by such deformation of the transparent substrates.

As can be seen by comparing this paragraph to the pending claims, the claimed invention is an improvement on the liquid crystal falling drop method described.

Takanashi is directed toward a liquid crystal display realizing a uniform display quality by reducing cell gap deviation caused by a thin sheet substrate. In reading Takanashi, it is apparent that the patent is directed toward the impact of inconsistently sized inelastic spacers on a thin sheet substrate and the subsequent cell gap deviation (see col. 3, lines 19-22). FIG. 3 of Takanashi shows the cell gap variation across mere millimeters. Takanashi indicates a standard deviation in spacer sizing of less than 10% is desirable. Clearly, a standard deviation in spacer diameter of 10% or less was acceptable in 1992, the year Takanashi was filed, but deviation approaching zero would have been far more desirable (see also, col. 3, lines 22-23 of Takanashi).

As the Examiner states on page 3 of the Final Office Action, Takanashi teaches a cell gap of 6 micrometers formed using spacers having an initial average size of 6 micrometers. However, nothing in Takanashi teaches spacers having an initial size greater than that of the desired cell gap and, to the Examiner's credit, the Examiner does not suggest that Takanashi teaches seeking spacers having an average initial size greater than that of the desired cell gap. This point is critical. Takanashi teaches an initial average size of the spacers is equivalent to the desired cell gap.

Claims 2-4 and 6-9 require "wherein a relative value of an initial average size of said first spacers to said appropriate cell gap is within a range of 102.9% to 107.0%," or depend

from a claim that contains this limitation. Takanashi teaches the initial average size of the spacers is equivalent to the appropriate cell gap. Applicant's claims require an initial average size of the spacer of 102.9% to 107.0% greater than the size of the appropriate cell gap. Compare these two sentences and it is clear that Takanashi does not teach this element of the claimed invention, nor does it suggest or motivate one to adopt this element of the claimed invention.

How does the Examiner argue that Takanashi teaches the above-cited claim limitation? The Examiner notes that Takanashi discloses the initial average size of the spacers (6 micrometers) is equivalent to the appropriate cell gap (6 micrometers) with a standard deviation of less than 10 percent (0.4 micrometers). However, this disclosed variation of size of the spacers is a limitation of manufacturing, not a desirable feature of spacers. The Examiner takes this standard deviation and states on page 3 of the Final Office Action, "accordingly, if the spacers are 6.2-6.4 micrometers in diameter and the cell gap is 6 micrometer, a relative value of an initial average size of the spacers to the appropriate cell gap is 103.3%-106.7%."

The Examiner has made two mistakes here. First, the Examiner has altered the initial average size of the spacers based on either misunderstanding or misapplying the standard deviation. Second, the Examiner has used the altered initial average size to imply (at the top of page 4 of the Final Action) that Takanashi taught making the initial average size of the spacers greater than the appropriate cell gap to "realize uniform display quality by reducing cell gap deviation."

Claims 2-4 and 6-9 are clearly improperly rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Takanashi. It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of

references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements/features/steps of the claim at issue. See, e.g., In re Dow Chemical, 5 U.S.P.Q. 2d 1529, 1531 (Fed. Cir. 1988), and In re Keller, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

Neither the AAPA, nor Takanashi disclose, teach, or suggest a relative value of an initial average size of said first spacers to said appropriate cell gap is within a range of 102.9% to 107.0%. The Examiner admits the AAPA fails to teach this limitation on page 3 of the final office action. The Examiner admits Takanashi teaches an initial average size of the spacers equivalent to that of the appropriate cell gap, which fails to teach this limitation. The Examiner unilaterally and inappropriately states the standard deviation taught in Takanashi means Takanashi teaches the initial average size is greater than the appropriate cell gap. The Examiner clearly misapplies the standard deviation to reach a conclusion that is counter to the admitted teaching of Takanashi. As neither the AAPA, nor Takanashi disclose, teach, or suggest all elements of the claimed invention, the Applicant submits that no combination of the AAPA and Takanashi would achieve the claimed invention.

Claims 2-4 and 6-9 are clearly improperly rejected under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Takanashi. Even if a combination of references teaches every element of the claimed invention, however without a motivation to combine, a rejection based on a prima facie case of obvious is improper. The level of skill in the art cannot be relied upon to provide the suggestion to combine references. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

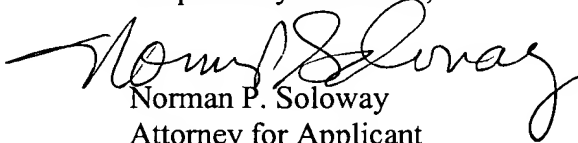
There is no motivation in the prior art to combine the AAPA with the Examiner's reading of Takanashi. To the extent the standard deviation can be used to modify the initial

average size of the spacers, there is no suggestion in Takanashi that a spacer 2.9 to 7.0% larger than the appropriate cell gap size is more any more useful than a spacer that is equal to or less than the appropriate cell gap size. There is no suggestion in Takanashi that varying the initial average spacer size relative to the appropriate cell gap size impacts "a uniform display quality by reducing cell gap deviation." As there is no motivation in the prior art to combine the AAPA with the Examiner's reading of Takanashi, the Applicant respectfully requests withdrawal of the obviousness rejection.

As the Examiner has failed to make a prima facie case of obviousness, the Applicant respectfully requests allowance of pending claims 2-4 and 6-9.

In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account Number 08-1391.

Respectfully submitted,


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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: MAIL STOP AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on May 1, 2006 at Tucson Arizona.

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By: 